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09/741,631	12/18/2000	Christopher Patrick	QCPA990347	5613

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Qualcomm Incorporated  
Patents Department  
5775 Morehouse Drive  
San Diego, CA 92121-1714

EXAMINER

LIU, SHUWANG

ART UNIT PAPER NUMBER

2634

DATE MAILED: 08/14/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.



## Office Action Summary

Application No.

09/741,631

Applicant(s)

PATRICK, CHRISTOPHER

Examiner

Shuwang Liu

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 18 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____                                    |



**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3-8, 10-15, 17-21, 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Camp et al. (US 6,070,078, see IDS, #2).

As shown in figures 1, 2 and 4, Camp et al. discloses:

(1) regarding claim 1:

a method comprising:

determining a code phase of each among a plurality of received signals

(column 4, lines 9-14); and

transmitting information pertaining to a time relation between the code phases of at least one pair among the plurality of received signals (column 5, line 33-column 6, line 45 and claim1).

(2) regarding claim 3:

wherein each among the plurality of received signals has a corresponding periodic code (column 2, lines 37-43), and

wherein each among the code phases relates to a predetermined position



within the corresponding periodic code (column 2, lines 37-43).

(3) regarding claim 4:

wherein each among the plurality of received signals is based at least in part on a corresponding direct-sequence spread spectrum modulated signal (column 7, lines 51-56).

(4) regarding claim 5:

wherein each among the plurality of received signals is based at least in part on a corresponding direct-sequence pseudonoise modulated signal (column 7, lines 51-56).

(5) regarding claim 6:

the method further comprising receiving a composite signal, wherein each among the plurality of received signals is based at least in part on at least a portion of the composite signal (column 3, lines 12-15).

(6) regarding claim 7:

wherein the determining a code phase of each among a plurality of received signals comprises calculating a correlation, for each among the plurality of received signals, between a corresponding code sequence and a signal based at least in part on the composite signal (column 8, lines 14-40),

wherein each among the plurality of received signals has a corresponding periodic code (column 2, lines 37-43), and

wherein each among the code phases relates to a corresponding predetermined position within the corresponding periodic code, and



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wherein the code sequence relates at least in part to the corresponding periodic code (column 3, lines 12-15).

(7) regarding claim 8:

A method comprising:

determining a code phase of a first received signal (column 8, lines 14-29); and

determining a code phase of a second received signal (column 8, 30-40),

wherein the determining a code phase of a second received signal is based at least in part on information pertaining to a time relation between the code phase of the first received signal and the code phase of the second received signal (column 10, lines 24-33).

(8) regarding claim 10:

wherein the first received signal has a corresponding periodic code and the second received signal has a corresponding periodic code, and

wherein each among the code phase of the first received signal and the code phase of the second received signal relates to a corresponding predetermined position within the corresponding periodic code (column 5, line 33-column 6, line 45 and claim1).

(9) regarding claim 11:

wherein each among the first received signal and the second received signal is based at least in part on a corresponding direct-sequence spread spectrum modulated signal (column 7, lines 51-56).

(10) regarding claim 12:



wherein each among the first received signal and the second received signal is based at least in part on a corresponding direct-sequence pseudonoise modulated signal (column 7, lines 51-56).

(11) regarding claim 13:

the method further comprising receiving a composite signal, wherein each among the first received signal and the second received signal is based at least in part on at least a portion of the composite signal (column 3, lines 12-15).

(12) regarding claim 14:

wherein the determining a code phase of a first received signal comprises calculating a correlation between a code sequence and a signal based at least in part on the composite signal (column 3, lines 12-15),

wherein the first received signal has a corresponding periodic code and the second received signal has a corresponding periodic code, and wherein each among the code phase of the first received signal and the code phase of the second received signal relates to a corresponding predetermined position within the corresponding periodic code (column 8, lines 14-40), and

wherein the code sequence relates at least in part to the periodic code corresponding to the first received signal (column line 33-column 6, line 45 and claim 1).

(13) regarding claim 15:

An apparatus comprising:

a receiver (150) configured to receive a plurality of signals;



a correlator configured to determine a code phase for each among the plurality of received signals (column 7, lines 1-26); and

a transmitter configured to transmit information pertaining to a time relation between the code phases of at least one pair among the plurality of received signals (column 5, line 33-column 6, line 45 and claim1).

(14) regarding claim 17:

wherein each among the plurality of received signals has a corresponding periodic code (column 3, lines 12-15), and

wherein each among the code phases relates to a predetermined position within the corresponding periodic code (column 5, line 33-column 6, line 45).

(15) regarding claim 18:

wherein each among the plurality of received signals is based at least in part on a corresponding direct-sequence spread spectrum modulated signal (column 7, lines 51-56).

(16) regarding claim 19:

wherein each among the plurality of received signals is based at least in part on a corresponding direct-sequence pseudonoise modulated signal (column 7, lines 51-56).

(17) regarding claim 20:

wherein the correlator is further configured to determine a code phase for each among the plurality of received signals at least in part by calculating a correlation, for each among the plurality of received signals, between a corresponding code



sequence and the plurality of received signals (column 7, lines 1-26),

wherein each among the plurality of received signals has a corresponding periodic code (column 2, lines 37-43);

wherein each among the code phases relates to a corresponding predetermined position within the corresponding periodic code, and

wherein the corresponding code sequence relates at least in part to the corresponding periodic code (column 5, line 33-column 6, line 45 and claim 1).

(18) regarding claim 21:

an apparatus comprising:

a receiver configured to receive a first and second signal and to receive a signal comprising information pertaining to a time relation between the code phase of the first received signal and the code phase of the second received signal (column 5, line 33-column 6, line 45 and claim 1), and

a correlator configured to determine a code phase of at least one of the first and second received signals with respect to a predetermined code and to correlate the other of the first and second received signals to the predetermined code based upon the time relationship between the first and second received signals (column 7, lines 1-26).

(19) regarding claim 23:

wherein the correlator is further configured to determine a code phase for the second received signal at least in part from the information (column 7, lines 1-26).

(20) regarding claim 24:



a system comprising:

a reference receiver (100) configured to receive signals from a plurality of space vehicles and to transmit information; and

a field receiver (150) configured to receive signals from a plurality of space vehicles and to receive the information,

wherein the reference receiver determines a reference code phase for each among at least a first one and a second one of the signals (column 8, lines 14-40), and

wherein the information pertains at least to a time relation between the reference code phases for the first one and the second one of the signals (column 8, lines 14-40), and

wherein the field receiver determines a field code phase for the first one of the signals (column 8, lines 14-40), and

wherein the field receiver determines a field code phase for the second one of the signals at least in part from the information (column 8, lines 14-40).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



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4. Claims 2, 9, 16, 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Camp, Jr. et al. (US 6,070,078) in view of Ruutu et al. (6,445,928).

Camp, Jr. et al. also discloses the transmitting information comprising the time difference between  $T_p$  (reference) and  $T_x$  (column 7, lines 1-15) instead of teaching the transmitting information comprising a time difference between the reference code phases for the first one and the second one of the signals as recited in claims.

Ruutu et al., in the same field of endeavor, teaches a method to calculate a time difference between the reference code phases for the first one and the second one of the signals (column 3, line 57-column 4, line 46) in order to determine the location of the receiver by means of the GPS.

It would be desirable to have an easy and quick determination of time difference values between the transmitters (satellites) transmission in order to determine the location of the mobile station in the network. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the calculation of time difference as taught by Ruutu et al. in the code shift search of Camp, Jr. et al. in order to provide an easier and quicker method to determine the location of the mobile station in the network.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is (703) 308-9556.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

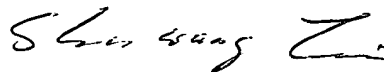
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Shuwang Liu  
Primary Examiner  
Art Unit 2634

August 6, 2003